Abstract

A calibration technique is presented for calibrating one or more non-reference indirect measurement systems with respect to a reference indirect measurement system. A reference map function fitting procedure fits a reference map function based on known values of a parameter of interest associated with each of one or more reference calibration samples and corresponding reference values associated with the one or more reference calibration samples measured on or simulated for the reference indirect measurement system. A correction function fitting procedure fits a correction function based on reference values for one or more calibration samples measured on or simulated for the reference indirect measurement system and corresponding values measured on the non-reference indirect measurement system. During normal use, the non-reference indirect measurement system obtains measurements that are indirectly representative of a parameter of interest of an object, corrects the raw measurements using the correction function to corresponding corrected measurements in order to minimize measurement differences between the indirect measurement system and the reference indirect measurement system, and estimates the parameter of interest of the object using the reference map function based on the corrected measurement. Reference map function fitting is typically performed only once, while correction function fitting is updated periodically and independently of the reference map function fitting to account for drift due to systemic, environmental, or other variations.